Claims

1. A composition comprising an oligonucleotide comprising
   (a) the sequence:

$$N_1 - N_2 - G - N_3 - G,$$

   wherein N_1 represents any nucleotide if N_2 and N_3 are G; N_2 represents any nucleotide if N_1 and N_3 are G; and N_3 represents any nucleotide if N_1 and N_2 are G; or
   (b) the sequence of (a), wherein at least one nucleotide is replaced by a corresponding nucleotide analog or derivative.

2. The composition of claim 1, wherein
   (a) N_1 represents G > A > T/U > C if N_2 and N_3 are G; N_2 represents G > A > T/U > C if N_1 and N_3 are G; and N_3 represents G > A > T/U > C if N_1 and N_2 are G; or
   (b) N_1, N_2, and N_3 represent a nucleotide analog or derivative of the nucleotides of (a).

3. The composition of claim 1 or 2, wherein said oligonucleotide comprises
   (a) the sequence GGGGG, GAGGG, GGGAG, GTGGG or GGGTG; or
   (b) a sequence of (a), wherein at least one nucleotide is replaced by a corresponding nucleotide analog or derivative.

4. The composition of any one of claims 1 to 3, wherein said oligonucleotide has
   (a) a sequence selected from the group consisting of the sequences of SEQ ID NOs: 1 to 19; or
   (b) a sequence of (a), wherein at least one nucleotide is replaced by a corresponding nucleotide analog or derivative.

5. The composition of any one of claims 1 to 3, wherein said oligonucleotide consists of between 10 and 50 nucleotides.

6. The composition of claim 5, wherein said oligonucleotide consists of between 13 and 30 nucleotides.

7. The composition of claim 6, wherein said oligonucleotide consists of between 17 and 21 nucleotides.

8. The composition of any one of claims 1 to 7, wherein the sequence as defined in any one of claims 1 to 3 represents the 3'-terminus of the oligonucleotide.

9. An oligonucleotide as defined in claim 4.

10. The composition of any one of claims 1 to 8 or the oligonucleotide of claim 9, wherein the nucleotides of said oligonucleotide are linked via phosphodiester-, phosphorothioate-, methylphosphonate- or peptide bonds.

11. The composition of any one of claims 1 to 8, or 10, or the oligonucleotide of claim 9 or 10, wherein said oligonucleotide is DNA or RNA.

12. The composition of any one of claims 1 to 8, 10, or 11, or the oligonucleotide of any one of claims 9 to 11, wherein said oligonucleotide is single-stranded.

13. The composition of any one of claims 1 to 8, or 10 to 12 which is a pharmaceutical composition optionally comprising a pharmaceutically acceptable carrier and/or diluent.

14. The composition of claim 13 which is a vaccine.

15. A vector comprising an oligonucleotide of any one of claims 9, 11 or 12.

16. A host cell comprising the vector of claim 15.

17. A method for the production of the oligonucleotide of any one of claims 9, 11 or 12, said method comprising the steps of culturing the host cell of claim 16 under conditions that cause production of the oligonucleotide, and recovering said oligonucleotide from the culture.

18. An oligonucleotide obtainable by the method of claim 17.

19. A kit comprising the composition of any one of claims 1 to 8, or 10 to 14, the oligonucleotide of any one of claims 9 to 12, or 18, the vector of claim 15, and/or the host cell of claim 16.

20. Use of the composition of any one of claims 1 to 8, or 10 to 14, and/or the oligonucleotide of claim 9 or 18, and/or the oligonucleotide as defined in any one of claims 1 to 3, 5 to 8, or 10 to 12 for the production of a pharmaceutical composition for preventing or treating septic shock, inflammation, autoimmune diseases, T_H1-mediated diseases, bacterial infections, parasitic infections, viral infections, spontaneous abortions, and/or tumors.

21. The use of claim 20, wherein said septic shock is induced by DNA, preferably of non-vertebrate origin, said autoimmune diseases are rheumatoid arthritis, Crohn's disease, sarcodosis, multiple sclerosis, Kawasaki syndrome, graft-versus-host disease, and/or transplant rejection, said T_H1-mediated diseases are streptococcal induced arthritis, Lyme arthritis, chronic inflammatory bowel disease, psoriasis vulgaris, experimental allergic encephalomyelitis (EAE), and/or insulin-dependent diabetes mellitus (IDDM), said parasitic infections are Leishmaniasis or Toxoplasmosis, and/or said viral infections are Cytomegalovirus- and/or HIV-infection.

22. Use of the composition of any one of claims 1 to 8, or 10 to 14, and/or the oligonucleotide of claim 9 or 18, and/or the oligonucleotide as defined in any

one of claims 1 to 3, 5 to 8, or 10 to 12 to inhibit activation of antigen-presenting cells.

23. The use of claim 22, wherein said antigen-presenting cells are macrophages, dentritic cells and/or B-lymphocytes.

24. Use of the composition of any one of claims 1 to 8, or 10 to 14, and/or the oligonucleotide of claim 9 or 18, and/or the oligonucleotide as defined in any one of claims 1 to 3, 5 to 8, or 10 to 12 to inhibit the uptake of DNA by a cell.

25. Use of the composition of any one of claims 1 to 8, or 10 to 14, and/or the oligonucleotide of claim 9 or 18, and/or the oligonucleotide as defined in any one of claims 1 to 3, 5 to 8, or 10 to 12 to co-stimulate cytotoxic T-lymphocytes or natural killer cells.

26. Use of the composition of any one of claims 1 to 8, or 10 to 14, and/or the oligonucleotide of claim 9 or 18, and/or the oligonucleotide as defined in any one of claims 1 to 3, 5 to 8, or 10 to 12 to stimulate natural killer cells.

27. Use of the composition of any one of claims 1 to 8, or 10 to 14, and/or the oligonucleotide of claim 9 or 18, and/or the oligonucleotide as defined in any one of claims 1 to 3, 5 to 8, or 10 to 12 to enhance the production of antibodies directed against an antigen.

28. Use of the composition of any one of claims 1 to 8, or 10 to 14, and/or the oligonucleotide of claim 9 or 18, and/or the oligonucleotide as defined in any one of claims 1 to 3, 5 to 8, or 10 to 12 to enhance the uptake of an agent by a cell.

29. The use of claim 28, wherein said agent is a nucleic acid or a (poly)peptide.

30. The use of claim 29, wherein said nucleic acid is a gene therapy vector.

31. A method for inducing proliferation of bone marrow cells comprising culturing bone marrow cells in the presence of the composition of any one of claims 1 to 8, or 10 to 14, and/or the oligonucleotide of claim 9 or 18, and/or the oligonucleotide as defined in any one of claims 1 to 3, 5 to 8, or 10 to 12.

32. Use of the composition of any one of claims 1 to 8, or 10 to 14, and/or the oligonucleotide of claim 9 or 18, and/or the oligonucleotide as defined in any one of claims 1 to 3, 5 to 8, or 10 to 12 to induce proliferation of bone marrow cells.

33. The method of claim 31 or the use of claim 32, wherein said bone marrow cells are macrophage precursor cells.